

Executive Summary

This Environmental Impact Statement (EIS) assesses the effects posed by the Wisconsin Department of Natural Resources (DNR) rule orders WM-05-03 and WM-09-03 (Appendix B) pertaining to control efforts for Chronic Wasting Disease (CWD). The intent of this rule proposal is to authorize control efforts that would eliminate CWD where it exists in the state and protect Wisconsin's statewide deer herd from CWD. The proposed actions are based on the best science available, on experience from other states managing CWD, and expertise of wildlife disease scientists. Currently, the best approach for controlling CWD is to drastically reduce the deer herd in the affected area to eliminate the disease and to reduce the deer density around an affected area so diseased deer are less likely to encounter and transmit the disease to healthy deer. In addition, prohibiting activities that artificially concentrate deer, such as baiting and feeding, reduces the potential for disease spread when healthy deer would come into contact with a diseased deer or encounter a contaminated food source.

This EIS assesses the effects from the proposed actions of depopulating affected areas, reducing the deer herd in areas surrounding affected areas, and banning baiting and feeding statewide to control the disease. The tools used to accomplish depopulation and herd reduction are also assessed.

Background.

What is Known about the Disease.

CWD belongs to a family of diseases known as transmissible spongiform encephalopathies (TSEs). These diseases cause microscopic holes in brain tissues giving it a sponge-like appearance. TSEs include such diseases as scrapie in sheep, mad cow disease in cattle, mink encephalopathy, and Creutzfeldt-Jakob disease in humans. The causative agent is believed to be a deformed protein, called a prion, that is typically found in nervous and lymphatic tissues.

Animals that are in the later stages of the disease exhibit behavioral changes and progressive loss of body condition that invariably lead to death. Clinical signs are not unique to the disease and can be due to other conditions such as malnutrition. Currently, the most reliable test for diagnosing CWD requires the microscopic examination and/or immunohistochemistry (IHC) staining of a specific portion of the brain. Just recently, IHC tests for retropharyngeal lymph nodes have been validated and can indicate early (four to six months) CWD infection in deer.

Mule deer, white-tailed deer, and Rocky Mountain elk are known to be naturally susceptible to CWD. Both sexes and all age classes show relatively uniform susceptibility. In contrast, a variety of wild and domestic ungulate species appear to be resistant, or at least much less susceptible to CWD, although the numbers of animals tested remain small. So far, moose, pronghorn antelope, Rocky Mountain bighorn sheep, mouflon, mountain goats, and blackbuck held in contact with CWD-infected deer and elk or resident in premises where CWD occurred have not developed the disease. Domestic livestock are not known to be naturally susceptible to CWD. A few cattle, sheep, and goats have resided in research facilities where they were exposed to CWD infected deer or elk for prolonged periods without developing the disease.

No treatment is known and once infected the disease is fatal in deer and elk. Infected deer and elk can appear robust and healthy in the early stages of CWD. Experimentally, the time from exposure to onset of clinical signs of the disease was about 15 months and the average time to death was 23 months in captive mule deer. Among deer and elk residing in facilities with a long history of CWD, most natural cases occur in 2-7 year old animals.

Specific details regarding route(s) of transmission of CWD remain unknown. Contact between infected and non-infected animals via saliva, urine, and feces is the most likely route of transmission. The route of infection is believed to be oral. It is not known when during the course of infection an animal begins shedding abnormal prions, but it may be progressive throughout the course of the disease in deer. Concentration of deer and elk in captivity or by artificial feeding likely increases transmission among individuals.

The importance of environmental contamination in free-ranging animals is not clearly understood. Because prions are resistant to degradation in the environment, indirect transmission via contamination of the environment by excreta or through infected organs from infected animals is possible.

Little is known about the rate of disease transmission, disease prevalence, geographic spread of CWD, or the factors that affect these rates. Increases in CWD prevalence in Colorado and Wyoming have been relatively slow. Epidemiological modeling suggests that prevalence in Colorado and Wyoming may have increased 0.5 to 0.7% annually during the 1980s and 1990s. Transmission rates, however, would need to be much higher to simulate epidemics in captive deer populations where extremely high prevalence (50-90%) has been observed. These results suggest more intensive transmission under confinement or in high-density populations. Although it is not known whether transmission rates are dependent on wild deer density, the density of deer in Wisconsin's CWD management areas may be as much as 10 times the mule deer density in northeast Colorado and southeast Wyoming where CWD is endemic. This fact has prompted concern that transmission rates may be much higher in Wisconsin than in western mule deer. Because CWD is readily transmitted among captive deer and elk concentrated in pens, it is believed that transmission may also be facilitated by the concentration of animals by artificial feeding and baiting.

How Deer Ecology Might Affect the Spread of CWD.

Although uncertainty remains about the mechanism of CWD spread across landscapes, scientists generally believe that dispersing deer are a likely avenue of disease spread within a geographic region. Male and female fawns generally remain with their mother through their first year of life. Male fawns usually disperse from their natal ranges as they approach puberty (12-18 months of age), whereas female fawns often remain in the same social group and in the same geographic area as their mother. Dispersal distances in the Midwest suggests that long-distance movements (greater than 30 miles) are quite rare. In southern Wisconsin average dispersal distances for bucks and does were 3-4 miles.

White-tailed deer in southern Wisconsin have relatively high rates of reproduction and mortality, resulting in fairly rapid population turnover. Data suggests that during the 1990s the deer population in southwestern Wisconsin increased by at least 40% each year with the addition of fawns. Estimates of adult survival rates from demographic models for southern Wisconsin suggest that about 30% of males and 60% of females survived from year to year during the late 1990s. This rapid turnover of the deer population could aid in combating CWD if diseased deer are removed from the population before they become infectious and can transmit the disease to healthy deer. Deer, however, are likely infectious long before showing signs of the disease, thus intentional removal of diseased animals is difficult.

Options for Controlling Wildlife Diseases.

Standard goals for managing wildlife diseases are: 1) preventing the introduction of disease where it does not exist, 2) controlling the spread of existing disease from an affected area, and/or 3) eradicating existing disease. All three goals are desirable for managing CWD in Wisconsin. Four general strategies often used for wildlife disease management to achieve these goals are: 1) directly attacking the disease agent, 2) blocking the transmission of the disease among individuals, 3) managing environmental conditions to reduce transmission, and 4) reducing the population of infected or susceptible individuals below the threshold required for the disease to persist.

The options for managing CWD in Wisconsin include blocking the transmission of the disease to healthy individuals and uninfected deer populations and reducing the population of infected or susceptible individuals to a level below the threshold for the disease to persist. Accomplishing both of these strategies requires reducing the size of the deer herd and preventing the concentration of deer at bait or feeding sites to minimize contact of diseased deer with healthy deer and the potential for transmission through environmental contamination. Other options were not considered since there is no known vaccine or way to directly attack the disease agent, nor is there any known way to practically manage environmental conditions to reduce the transmission of the disease.

Population reductions may include: 1) a focal depopulation at a specific site of infection, 2) depopulation of an area surrounding the disease site to create a transmission barrier, and 3) general depopulation over a large area. The success of local or barrier depopulation is dependent on effective disease surveillance in

order for control measures to be applied promptly in the correct location if disease is detected. Population reduction requires continued effort over multiple years to be effective due to the potential for population growth via reproduction and ingress. Depopulation has been used to control a variety of wildlife diseases including rabies, plague, avian cholera, tuberculosis, histoplasmosis, rinderpest, brucellosis, and foot-and-mouth disease.

How Other States are Managing CWD.

CWD management plans have been developed nationally and in other states, including Colorado, Nebraska, and South Dakota.

Generally, the goals of these state and national plans are to: 1) minimize the potential for CWD spread; 2) manage infection rates within existing endemic areas according to each state's objectives; 3) eliminate the disease to the extent practicable when outbreaks occur in new areas; 4) support and conduct applied research that will expand knowledge of CWD; and 5) provide timely, complete, and accurate information about CWD to agency personnel and the public.

In addition, the recommendations of these state and national plans are that: 1) artificial feeding and baiting should be banned or discouraged in affected areas; 2) a more thorough understanding of CWD is needed for effective management of the disease and states should participate in ongoing and future research; 3) public hunting is an important tool for reducing deer and elk populations to reduce disease prevalence, but disease management should take precedence over recreational hunting opportunities if they are in conflict; 4) it may be necessary for agency personnel or agents to remove animals for disease management or research, and agencies should seek the authority needed for such actions; 5) state wildlife agencies should continue to work cooperatively with their public health agencies to monitor potential human health risks associated with CWD and develop strategies for sharing current information about CWD with hunters in affected areas; 6) state agencies should continue to work cooperatively with those agencies in their states that regulate the movement and testing of captive deer and elk; and 7) states should conduct surveillance to monitor the occurrence, distribution, and prevalence of CWD and the effectiveness of CWD management actions.

Thirty-one states are currently in the process of developing new and/or additional CWD regulations in response to these CWD management goals. Forty-six states conduct CWD testing of wild deer and elk, and two additional states are in the process of developing surveillance programs. In addition, at least 26 states and two Canadian provinces do not allow baiting of deer and elk. At least three states have enacted restrictions or are in the process of developing rules to restrict or ban baiting. At least 12 states do not allow the feeding of deer or elk, or restrict the use of feed. Nine states and one Canadian province have put restrictions on the importation of hunter-harvested deer and elk parts and six states are discussing similar bans.

History of CWD in Wisconsin.

The Wisconsin Department of Natural Resources (DNR) began active CWD surveillance of hunter-harvested deer in 1999 and through 2001 had sampled approximately 1,100 deer throughout the state. The DNR was notified in February 2002 that three male deer harvested from Deer Management Unit 70A in western Dane County tested positive for CWD. A 12-mile radius surveillance area was designated that centered on the three index cases. During March and April 2002, 516 deer were collected from within the surveillance area of which 15 (2.9%) tested positive for CWD. However, prevalence of these positive cases was clustered and not uniformly distributed in the surveillance area.

A male white-tailed deer from a deer farm in Portage County tested positive for CWD in September of 2002 when it was sampled in compliance with the rule requiring testing of all carcasses if any part of the carcass is to leave the farm. This finding triggered an investigation which resulted in identifying a CWD-positive female white-tailed deer on a Walworth County farm that same month. Another deer, assumed to have escaped from the same Walworth County farm in April 2002, was shot near the farm and tested positive for CWD in October 2002. All of the deer in the Walworth County herd were killed and tested for CWD in December 2002 and four additional CWD infected deer were identified. The CWD positive deer on

both of these farms appear to have originated on a second Walworth County farm. All three farms were quarantined in September 2002 and the two remaining farms will stay under quarantine until they are depopulated.

As of January 31, 2003, 36% of the statewide tests results had been returned that were collected during the 2002 and early 2003 statewide CWD surveillance testing. A total of 38,764 total samples were taken (11,434 in the eradication zone, 5,808 in the Management Zone, and 21,470 in the remainder of the state, two were from unknown origins). Thus far, five white-tailed deer from the western part of the current CWD Management Zone have tested positive for the disease outside the current eradication zone. Until the discovery of these positives, all previous positive wild samples (53) were contained within the current eradication zone.

Current Actions Taken by Wisconsin DNR to Control CWD.

An interagency task force was formed in response to the discovery of CWD in Wisconsin to guide CWD management. The task force consisted of personnel from the Department of Natural Resources (DNR), Department of Agriculture, Trade, and Consumer Protection (DATCP), and Department of Health and Family Services (DHFS). The task force recommended additional surveillance in the spring of 2002. Based on the results of the surveillance sampling, the task force developed and implemented an aggressive disease management program via emergency rules in an attempt to eradicate CWD from the state. Management strategies included: 1) extensive testing to precisely determine the geographic distribution of CWD; 2) depopulation of deer in the area known to be infected with CWD; 3) reducing deer populations in surrounding areas to minimize risk of dispersing deer establishing new disease areas; 4) banning the use of bait for deer hunting and the artificial feeding of deer to reduce the probability of CWD transmission; and 5) conducting research to increase understanding of the disease and the effect of deer behavior on disease transmission.

These management strategies required special legislative authority and emergency administrative rules. A special session of the legislature was held in May 2002 to address CWD. The legislature passed the 2001 Wisconsin Act 108 (Appendix A) that authorized the DNR to regulate the feeding of wildlife, authorized DNR and cooperating agency staff to shoot deer from vehicles and to use aircraft, approved a supplemental appropriation to pay for CWD management, and authorized the extension of emergency rules.

The Natural Resources Board in June 2002 approved a package of emergency rules that created three CWD management zones: the CWD Eradication Zone (EZ), an Intensive Harvest Zone (IHZ), and the CWD Management Zone (in the proposed rule this zone is now called the Herd Reduction Zone or HRZ). The EZ was defined to extend 9½ miles from the original center of the known CWD positive deer and 4½ miles out from any additional positive deer. The deer population goal for the EZ was set to zero. The IHZ immediately surrounded the EZ with borders defined on recognizable state and county roads. The HRZ extends out to road boundaries approximately 40 miles out from the EZ. The population goal in the HRZ was established at 10 deer per square mile of deer habitat. The emergency rule specified the conditions under which DNR staff can shoot deer from vehicles and aircraft. The rule identifies deer within the EZ to be causing a nuisance and authorizes the DNR to issue permits to landowners and their permittees to shoot deer during periods defined by the DNR throughout the year. The emergency rule also prohibited the statewide use of bait for deer hunting and the artificial feeding of deer to reduce the probability of CWD transmission. The rule expanded firearm options and deer seasons in state parks and authorized the issuance of replacement permits if hunters shoot diseased deer. The rule further specified transportation, registration, and disease sampling requirements for harvested deer.

During the 2002 CWD Management Zone hunts approximately 41,000 deer were harvested. Approximately 11,000 deer were killed in the IHZ.

Wisconsin Act 56, as of January 1, 2003, moved the authority to regulate captive white-tailed deer from the DNR to the DATCP, however deer farm fencing inspection authority remains with the DNR. Therefore, new fencing standards were created with an emergency rule until a rule could replace it. While incorporating many of the deer farm fence standards from ch. NR 16, Wis. Adm. Code, the rule increased the required

height of new fences from 8 - 10 feet. It also phased in a requirement that deer farms be double fenced unless the deer farm is enrolled in the chronic wasting disease herd monitoring or herd surveillance program.

Current Actions Taken by Other Wisconsin State Agencies.

Emergency rules that restricted importation of deer and elk from out of state were written by the DATCP in Spring 2002. These rules require that only deer and elk from herds that have been enrolled in a state-sponsored CWD monitoring program, or the equivalent, for five years may enter the state. The rules further dictate that all deer farmers that move live animals off their farm must be enrolled in the CWD monitoring program and that all carcasses, when any part of the carcass leaves the deer farm, must be tested for CWD.

The DATCP Board adopted a set of permanent rules in December 2002 that were similar to the emergency rules adopted in the previous spring. The permanent rules are strengthened by requiring owners of farm-raised deer to report all escapes within 48 hours and to notify a certified veterinarian within 24 hours of observing any signs or symptoms of CWD. The rules further require that every farm-raised deer over 16 months of age that dies on the premises be tested for CWD.

The DHFS has been working closely with DNR to help provide hunters and venison consumers with information about potential human risks and ways to minimize those risks so prospective hunters may make informed decisions. Currently, there is no scientific evidence that CWD poses a risk to human health. However, there are aspects of prion transmission that remain unknown, and no one can guarantee that absolutely no risk exists regarding human consumption of animals that may have contracted CWD. The DHFS is implementing a surveillance program for Creutzfeldt-Jakob disease (CJD) in humans. Clinical criteria are being developed for detecting and reporting cases of human prion disease. Funding has been obtained to ensure Wisconsin has the capacity to perform autopsies on people suspected of being infected with prion disease, to educate physicians, hospitals, and laboratories on the need to report all cases of prion disease, and to investigate unusual clusters or occurrences of CJD or CJD-like illnesses.

The Wisconsin Veterinary Diagnostic Lab (WVDL) made their facilities available for sample collection during the spring surveillance period and began the certification process in spring 2002 to obtain United States Department of Agriculture (USDA) authorization to run the immunohistochemistry (IHC) tests and rapid assays for CWD detection in Wisconsin. WVDL began testing CWD surveillance samples from hunter harvested deer in fall 2002 and is expected to complete testing of 38,000 samples by spring 2003.

The University of Wisconsin provided resources to assist with peer review of CWD management plans, computer modeling, CWD genetic and deer behavior research, and public outreach and education activities.

Tribal Issues and Involvement.

Wisconsin's Native American Indian tribes and the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) partner with the DNR in various natural resource management activities including deer management. The Wisconsin Chippewa tribes are entitled to harvest up to 50% of deer available for harvest in deer management units that fall within ceded territories. Tribal deer harvest occurs primarily in the northern deer management units, while limited harvest occurs in all other portions of the state except the south. None of the ceded territory falls in the southern portion of the state where the current eradication and herd reduction zones are located. The DNR would seek joint tribal participation if CWD is discovered in the ceded territories and would require the implementation of CWD control measures. GLIFWC assisted the DNR with the statewide surveillance efforts during fall 2002.

Wisconsin's CWD Management Plan.

A CWD Management Plan was developed in response to the discovery of CWD in Wisconsin. The goal for CWD management in Wisconsin is to minimize the negative impact of CWD on wild and captive deer and elk populations and to the state's economy, hunters, landowners, and others dependent upon healthy wild and farmed populations of deer and elk. Management program objectives include: 1) defining the geographic distribution and prevalence of infection; 2) investigating the possible origin of the disease in the state; 3) minimizing the potential spread of CWD to new areas; 4) eradicating the disease in the affected area; 5) enhancing scientific information about the disease, 6) using the best available scientific information to guide management; and 7) providing the public with timely, complete, and accurate information. There are five major actions suggested in the plan: surveillance, human health protection, research, communication, and disease control.

Disease surveillance is key to the implementation of the management plan. Surveillance will be conducted throughout the state to determine the extent and prevalence of CWD.

Human health concerns will be addressed by the DHFS by monitoring cases of CJD and providing information to hunters and venison consumers on the safety of eating venison from CWD infected deer.

The DNR in cooperation with the University of Wisconsin and the U.S. Geological Survey's National Wildlife Health Center has begun a research program to expand the scientific information needed for managing CWD in Wisconsin and to evaluate the effectiveness of the CWD management program. This research program incorporates studies on disease dynamics, deer ecology, and hunter and landowner attitudes and desires.

Providing information about CWD has been a priority for the DNR. The DNR has communicated with the public in the most timely, complete, and accurate fashion possible. The DNR has used all available communication tools in this effort including news releases, television appearances, radio interviews, brochures, handouts, public meetings, and the Internet. A web site [<http://www.dnr.state.wi.us/>] has been established and is updated weekly with new information and test results from samples submitted by hunters.

Disease control goals may be accomplished by reducing the deer population within and adjacent to the affected area and banning baiting and feeding deer to limit the spread of the disease. Currently, Wisconsin's CWD management plan assumes that the disease is limited to southwest Wisconsin. The best management strategies for this situation are to depopulate the deer herd in the known affected area, reduce nearby deer populations to prevent expansion of CWD into adjacent areas, and implement a statewide ban on baiting and feeding. These plans are integrated with an intensive statewide surveillance program to determine the occurrence of the disease in other areas outside of the known affected area.

Depopulation.

Assessment of Depopulation Action.

Based on the best science available and consultation with CWD experts across the country, the best strategy to eradicate CWD from an affected area is to establish a zone and reduce the deer herd to near zero within that zone. This prevents transmission of the disease both within and outside of the affected area, lowers the population of susceptible animals below the threshold that the disease can persist, and prevents the infectious agent from being shed into the environment. The basis for a population goal of near zero deer to eradicate the disease is based on models of CWD epidemiology and current understanding of the disease that suggest that CWD is a uniquely difficult disease to manage. Long incubation, subtle early clinical signs, absence of a practical live test, an extremely resistant infectious agent, possible environmental contamination, and incomplete understanding of transmission constrain options for controlling or eradicating CWD. Published studies for Colorado indicate that CWD will dramatically reduce mule deer populations to very low levels. A Wisconsin model using similar CWD transmission dynamics suggests high prevalence and dramatic population declines if CWD is allowed to spread unchecked for 20 years. Models further suggest that early, aggressive intervention via selective removal or more generalized population reduction show the greatest promise in preventing CWD from being established in new areas.

Selective removal of only clinical suspect animals in Colorado and Wyoming, however, has failed to reduce prevalence. Although depopulation to control CWD must be considered experimental, there appears to be no practical alternative.

Proposed Action. The proposed action is to establish Eradication and Intensive Harvest Zones. An eradication zone (EZ), for the purpose of the proposed rule, is defined as those one square mile sections of land contained within or intersected by a 4½ mile radius drawn from the center of a section of land found to have contained an animal that tested positive for CWD. The biological basis for the 4½ mile radius is an attempt to balance the dispersal likelihood of potentially infected deer against the logistical difficulty of depopulating deer over a large area. An intensive harvest zone (IHZ), for the purposes of the proposed rule, is defined as the area which is bordered by highways and other readily identifiable features that surrounds an EZ. This proposed rule would create an IHZ surrounding the current EZ, however, future IHZs could be created through additional rules. The purpose of an IHZ is to allow for the implementation of more liberal hunting seasons separate from the remainder of the other zones. Liberal hunting seasons are proposed to reduce deer herd density. An IHZ would change from an earn-a-buck regulation to an either-sex regulation when the zone deer herd is reduced to five deer per square mile of deer habitat. As the deer population is reduced, it will become unreasonable to expect that a hunter must harvest an antlerless deer prior to harvesting a buck. The season length would remain unchanged to allow maximum opportunity for continued efforts to depopulate the affected area. The DNR would issue permits to landowners to remove deer outside of the scheduled hunting seasons in an EZ. DNR staff and staff from other cooperating agencies would supplement landowner removal efforts by shooting deer on lands where EZ landowners have authorized access.

Effects. The likely effects of this action on the disease should be reduced transmission of the disease among individuals, fewer infected animals on the landscape, smaller geographic distribution of the disease, a population of susceptible animals lower than the threshold for the disease to persist, and less environmental contamination from diseased animals and the carcasses of diseased animals shedding abnormal prions. Depopulation of the deer herd in an EZ is expected to eradicate CWD from the affected area. However, the actual level of herd reduction would depend on landowner and hunter cooperation.

Effects of depopulation on ecosystems should generally be positive. Some tree regeneration and browse sensitive plant species have been suppressed at current deer densities, resulting in secondary negative impacts on ground and shrub-nesting birds and possibly small mammals. Native predators in Wisconsin, with the exception of wolves, are not dependent on deer. The presence of CWD in Wisconsin poses a threat to elk restoration because they are susceptible to CWD. Negative effects on native ecosystems associated with too few white-tailed deer have not been described or demonstrated in the scientific literature.

Socially and economically, the deer depopulation proposed for CWD EZs and IHZs would likely result in a loss of hunting recreation, hunting tradition, hunting associated businesses, and wildlife viewing opportunities. If CWD is discovered in the ceded territories depopulation of the deer herd could have an impact on the Chippewa tribes and the overall tribal deer harvest, depending on the extent and location of the disease. Deer population reductions can be expected to result in a reduction in deer damage to agricultural crops and timber resources and fewer deer-vehicle accidents. These impacts would be expected to last for the duration of disease control efforts and subsequent repopulation of the area.

The rapid population reduction planned for these zones would require changes to deer herd monitoring procedures, because the traditional sex-age-kill method is dependent on fairly stable hunting season frameworks and harvest rates. Deer populations in these zones would be monitored using a combination of aerial surveys (helicopter and/or fixed-wing) and population modeling. Rapid population reduction may create a situation where hunter harvest exceeds hunter interest in consuming venison, generating the need to dispose of unwanted deer carcasses.

Other Alternatives Considered.

No Action. Under this alternative, no EZ or IHZ would exist and no effort would be made to depopulate the deer herd in affected areas. Hunting season frameworks would not change. Zone T season structures could be used in selected deer management units if overwinter populations were sufficiently over goal and that a regular 9-day gun season would be insufficient to reduce herds to goal.

Based on current science and the experiences of other states, no intervention would likely result in increased prevalence, geographic spread of the disease, and corresponding reduction in deer populations resulting from the disease. For example, research in Colorado provides preliminary evidence of decreased adult survival in areas where CWD is established and of increasing prevalence in endemic areas over time. These findings support model predictions that the disease would increase in frequency of occurrence and would significantly impact deer populations in Wisconsin. There is no evidence at present of genetic resistance to CWD within mule and white-tailed deer. Although genetic resistance has not been studied extensively, preliminary results indicate that a very large portion of deer in Wisconsin are susceptible to CWD. Animals that die of CWD are adults, and susceptible genes would be passed to future generations before the animals became clinically ill and died from CWD. Management must be considered experimental because of the many scientific uncertainties regarding the basic epidemiology and ecology of CWD. However, this cannot be taken as an argument for waiting for new research or for doing nothing. Generally, CWD behaves in a manner similar to other infectious diseases, therefore it is reasonable to apply management techniques used for chronic, late-onset infectious diseases. Delaying management actions until more information is available may result in more costly and fewer options for eradicating this disease.

Deer Population Reduction and Research. An effort would be made to reduce the high deer population through the use of hunting to a goal of 10 deer per square mile in the current CWD affected area under this alternative. Hunting season frameworks could be altered to facilitate this population reduction, but out-of-season shooting permits would not be issued to landowners, and agency personnel would likely not participate in removal activities. Hunter harvested deer would be sampled and tested for CWD to determine the distribution and prevalence of the disease and research on disease transmission would be conducted.

The reduction in deer population density in the affected area, together with the ban on baiting and feeding of deer, may slow the rate of increase in prevalence of CWD and slow the rate of geographic spread. However, these actions alone would not likely reduce prevalence or lead to the elimination of CWD from the state. Field data from Colorado and Wyoming demonstrate that CWD can persist, increase in prevalence, and spread to new areas in mule and white-tailed deer populations that occur at densities that are much lower (approximately 5-6 deer per square mile) than those in southwestern Wisconsin (75 or more deer per square mile). Extensive testing of hunter harvested deer would provide detailed information on the prevalence and distribution of CWD. Research would likely require several years before generating additional understanding of disease transmission mechanisms, during which time prevalence would likely increase and CWD may spread to new areas. The level of environmental contamination could increase because infected deer would remain in the affected area under this alternative.

Live Test and Euthanize. This alternative would involve live trapping deer in affected areas, testing them to determine if they are infected with CWD, and euthanizing any positive individuals.

This alternative would require the existence of a reliable and practical CWD test for live animals and extensive time and effort devoted to trapping and sampling live deer. The primary limitation is the need to capture, handle, and hold the 25,000 to 30,000 deer that are estimated to be within the current 411-square mile EZ and potentially exposed to CWD. It would be very difficult to capture even a small percentage of the total deer population. Because deer in early stages of infection may not have detectable levels of CWD prions and could test negative, it would be necessary to hold test-negative deer and retest them over an extended period of time. Therefore, this alternative would not be an effective means of containing or eliminating CWD.

Selective Removal of Individual Animals. This alternative would involve removal of selected individual deer that have the appearance of clinical symptoms of CWD or an identifiable subset of the population that may have a higher prevalence or a greater potential to spread the disease, (e.g., dispersing yearling males).

Although current evidence indicates that CWD occurs in clusters, little information is available about possible differences in prevalence of CWD among sex and age classes of white-tailed deer that might be used to design a selective removal program. This is one of the questions being addressed in the disease dynamics portion of Wisconsin's CWD research program. Selective removal of individual animals exhibiting clinical symptoms of CWD has been practiced in the endemic areas of Colorado and Wyoming for a number of years without success in reducing prevalence. The effectiveness of this technique may be limited by the long period of time (15 months or more) between infection and exhibition of clinical symptoms when clinical signs of CWD are subtle and may be unrecognizable on casual observation. During this time the diseased animal may be able to infect other susceptible individuals. Therefore, considering the limitations of this alternative, it would not be an effective means of containing or eliminating CWD.

Assessment of Depopulation Program Tools.

Proposed Actions. A combination of tools would be necessary to achieve depopulation. No one tool is expected to achieve depopulation by itself. The proposed tools to accomplish depopulation include: 1) extended hunting seasons and unlimited antlerless tags; 2) earn-a-buck regulations followed by either sex harvest once a population threshold is reached; 3) state park and refuge hunting opportunities; 4) liberalized firearm restrictions; 5) harvest of deer by authorized agency shooters; 6) free landowner permits that exempt landowners and their designees from hunting license requirements and allow the harvest of deer outside established deer seasons; 7) potential use of aircraft to rally and harvest deer by agency personnel; and 8) authorize landowners and agency personnel to shoot over bait to aid the efforts to eliminate deer under highly controlled and regulated situations.

Effects. These tools should give hunters every opportunity to participate in reducing the deer herd and result in the largest harvest of all alternatives considered. Public safety was given highest consideration and should be protected under the proposed tools. The incidence of trespass should remain unchanged since hunters still need permission to hunt on private land and landowners control to whom they give special landowner permits. There is potential for recreational conflicts including requiring all hunters except waterfowl hunters to wear blaze orange. This could limit success of fall turkey and archery deer hunters. The longer seasons may burden landowners with hunters asking permission to hunt. Longer seasons may also affect farmers concerned about their safety while harvesting crops, or the safety of their livestock while on pasture, during gun hunting seasons. Higher costs would occur and a greater workload would be placed on law enforcement officials and other DNR staff. Initially it is anticipated that there would be a period of increased hunting opportunity and therefore an increase in local revenues associated with hunting related business. However, in subsequent years, hunting opportunities are anticipated to decline with a decrease in the deer population, resulting in reduced revenues for local economies within an EZ. Baiting under permit would ensure that baiting only be done in controlled situations and with harvest expectations. This would provide another tool to achieve the goal of depopulation in an EZ. The risks associated with disease transmission over bait under these circumstances would be minimal because the goal is to remove all or nearly all of the deer in an EZ.

Other Alternatives Considered. The following alternatives were considered: 1) traditional seasons or modest season extension; 2) require licenses of all hunters; 3) unlimited either-sex tags throughout the season (i.e., no earn-a-buck); 4) earn-a-buck with multiple antlerless deer per buck; 5) use a smaller or larger area to define an EZ; 6) contraception as a depopulation method; 7) depopulation through public hunting only; 8) depopulation through landowner shooting only; 9) depopulation through agency shooting only; 10) depopulation using live capture and euthanasia; and 11) depopulation using toxicants. However, these were not viewed as viable alternatives to achieving the aggressive depopulation goals that have been established for an EZ and IHZ. A detailed analysis of these alternatives can be found in the sections of the EIS relating to the tools for achieving depopulation and herd reduction.

Herd Reduction.

Assessment of Herd Reduction Program.

If CWD transmission rates are density-dependent, then a reduction in the deer population of a Herd Reduction Zone (HRZ) could be expected to reduce the rate of spread should new affected areas become established by deer dispersing from an EZ. The proposed deer density for a HRZ is similar to the deer density in Colorado's endemic area where CWD has persisted with slow increases in prevalence. This would allow time for new CWD positive areas to be discovered through intense surveillance that would be conducted in a HRZ.

Proposed Action. The proposed rule allows for the establishment of HRZs. The proposed population goal in a HRZ is 10 deer per square mile. The boundaries for this zone follow recognizable roads. The rule would also create a HRZ which is located approximately 40 miles from the center of the current known CWD-affected area. A 40-mile extent was chosen because deer, although uncommon, can disperse up to 30 miles. Liberal hunting seasons would be established in a HRZ to quickly reduce the deer population to 10 deer per square mile of deer habitat. In addition, intensive disease surveillance would be conducted within a HRZ.

Effects. The primary effect of a low deer population at 10 deer per square mile of deer habitat would be to create a buffer around an EZ and IHZ that is anticipated to reduce the spread of disease from an EZ and to decrease ingress of deer back into an EZ.

Depending on the location of a HRZ the change in deer population goals could range from no change to a reduction of 67%. However, the actual success of herd reduction would depend on landowner and hunter cooperation.

Effects of herd reduction on ecosystems should generally be positive and similar to those discussed in the Depopulation section, however the effects are expected to be less than those experienced in an EZ/IHZ as a HRZ would have a higher deer population.

The deer herd reduction proposed for a HRZ would likely result in short-term loss of hunting recreation, hunting associated industries, and wildlife viewing opportunities. Research to address some of these issues is currently being conducted which should provide information on hunter behavior and attitudes. If CWD is discovered in the ceded territories deer herd reduction could have an impact on the Chippewa tribes and the overall tribal deer harvest, depending on the extent and location of the disease. Deer population reductions may result in less damage to agricultural crops and timber resources and fewer deer-vehicle accidents. These impacts would be expected to last for the duration of disease control efforts and subsequent repopulation of the area.

The rapid population reduction planned for a HRZ would require changes to deer herd monitoring procedures because the traditional sex-age-kill method is dependent on fairly stable hunting season frameworks and harvest rates. Deer populations in a HRZ would be monitored using a combination of aerial surveys (helicopter or fixed-wing) and population modeling. In addition, this action may create a situation where hunter harvest exceeds hunter interest in consuming venison, generating the need to dispose of unwanted deer carcasses.

Other Alternatives Considered.

No Action. Under this alternative, no HRZ would exist and no effort would be made to reduce the deer population below the current deer management goal levels (10 to 30 deer per square mile of deer habitat). Hunting season frameworks would not change. Zone T season structures could be used in selected deer management units if overwinter populations were sufficiently over goal and a regular 9-day gun season was determined to be insufficient to reduce herds to goal.

Because hunting season frameworks would not be altered under this alternative, the traditional sex-age-kill method could continue to be used to monitor changes in deer population size.

Current deer densities in Wisconsin are generally much higher than densities in Colorado. These higher densities may facilitate more rapid spread of CWD, making it more difficult to contain and eradicate the disease when infected deer disperse and establish new disease locations. Maintaining deer densities of 20-30 deer per square mile in the area surrounding an EZ would likely result in deer moving back into the zone, making it more difficult to eradicate the disease.

Intensive Surveillance. Under this alternative, decisions about future population reductions would be deferred until intensive disease surveillance had been conducted within a HRZ. The intensity of surveillance conducted in a HRZ would be higher than in the rest of the state because of the higher risk of CWD spread associated with its close proximity to an EZ. No effort would be made to reduce the deer population in a HRZ below the current goal levels, until surveillance discovered the disease. Hunting season frameworks would not change. Zone T season structures could be used in selected deer management units if over winter populations were sufficiently over goal and a regular 9-day gun season was determined to be insufficient to reduce herds to goal.

The effects of this alternative on the deer population, deer population monitoring, and carcass disposal would likely be the same as those under the no action alternative. The intensity of sampling for CWD surveillance under this alternative would be greater than under the no action alternative. This would increase the probability that new disease areas were discovered at an early stage of infection. However, several years of intense surveillance would likely be needed before there is a solid understanding of disease risk in a HRZ. Therefore, it is possible that several years may elapse before new disease areas were discovered. Because current deer population goals in a HRZ are greater than those in Colorado's endemic area, CWD may spread more rapidly than in Colorado. Rapid spread from a newly affected area would substantially increase the difficulty of containing and eradicating the disease from a HRZ. Maintaining deer densities of 20-30 deer per square mile in the area surrounding an EZ would likely result in immigration into an EZ making it more difficult to eradicate CWD from the affected area.

Assessment of Herd Reduction Tools.

Proposed Action. A combination of tools would be necessary to achieve herd reduction. No one tool is expected to achieve herd reduction by itself. The tools proposed to accomplish herd reduction include: 1) extended hunting seasons with unlimited antlerless tags; 2) earn-a-buck regulations; and 3) extended state park and refuge hunting seasons and regulations. HRZs would change to standard seasons and regulations in a deer management unit within a HRZ when the deer herd in that unit is reduced to 15 deer per square mile of deer habitat. These standard seasons along with Zone T seasons and regulations would be used to further reduce and keep the deer population at 10 deer per square mile of deer habitat.

Effects. These tools should give hunters every opportunity to participate in reducing the deer herd and should result in the most effective harvest of all alternatives considered. Public safety was given highest consideration and should be protected under the proposed tools. The incidence of trespass should remain unchanged since hunters still need permission to hunt on private lands. There is potential for recreational conflicts including requiring all hunters except waterfowl hunters to wear blaze orange. This could reduce success somewhat for fall turkey and archery deer hunters. The longer seasons may burden landowners with hunters asking permission to hunt. Longer seasons may also affect farmers concerned about their safety while harvesting crops, or the safety of their livestock while on pasture, during gun hunting seasons. Higher costs would occur and a greater workload would be placed on law enforcement officials and other DNR staff. Initially it is anticipated that there would be a period of increased hunting opportunity and therefore an increase in local revenues associated with hunting related business. In subsequent years, however, hunting opportunities are anticipated to decline with a decrease in the deer population, resulting in reduced revenues for local economies within a HRZ. While herd reduction is ongoing, the high numbers of harvested animals promise excellent surveillance and disease discovery possibilities.

Other Alternatives Considered. The following alternatives were considered: 1) traditional seasons or modest season extension; 2) unlimited either-sex tags only (*i.e.* no earn-a-buck); and 3) earn-a-buck with multiple antlerless deer per buck. However, these alternatives were not determined to be viable alternatives to achieving the aggressive herd reduction goals that have been established for a HRZ. A detailed analysis of these alternatives can be found in the section of the EIS relating to the tools for achieving herd reduction.

Baiting and Feeding Ban.

Assessment of Baiting and Feeding Ban.

Based on the experience of outside experts and the recommendations of other state and national plans, significant disease risk may be reduced with a statewide prohibition of deer baiting and feeding. The practice of artificially supplementing the diet of free-ranging white-tailed deer through baiting and feeding has the effect of artificially concentrating deer, likely facilitating both increased animal-to-animal contact and exposure to potentially contaminated sites. A consequence of increased opportunity for contact would be an increased likelihood for transmission of the infectious disease among deer. Baiting and feeding of deer may allow CWD to become established in a population by enhancing the spread of the disease if an infected deer moves or is moved into a previously unaffected area. Prohibiting baiting and feeding is part of a comprehensive strategy, not a stand-alone solution.

Proposed Action. A ban on baiting and feeding of deer is proposed statewide to limit or reduce the transmission of disease among deer.

Effects. Banning deer baiting and feeding should reduce transmission of disease by reducing the amount of contact between individual deer and eliminating potentially contaminated food sites at which deer could become infected. An elimination of deer baiting and feeding would also likely reduce and maintain deer populations within the limits of habitat carrying capacity which is one of the most effective means of controlling infectious diseases.

There is potential for a reduced or increased harvest with a ban on baiting. If a reduced harvest were a result of the prohibition, then deer density may increase resulting in an increase in disease transmission. Studies to date have suggested small and inconsistent differences in success between hunters that use bait and those that do not bait. An analysis using Wisconsin data suggests that a prohibition on baiting would not be likely to significantly affect firearm harvest of antlerless deer, but might depress archery harvest.

During the 2002 Wisconsin deer seasons, there was a 19% reduction in the number of archery licenses and a 10% decrease in gun deer licenses sold from 2001 license sales. In addition, the preliminary analysis of the deer harvest data shows a 38% reduction in the archery harvest and a 10% reduction in the deer gun harvest. Until data from the 2002 CWD deer hunter survey are analyzed (Petchenik in prep.), it is not certain whether this reduction was due in part to the elimination of baiting as a hunting method, or whether concerns about CWD were the factors limiting participation and harvest.

The primary effect of a proposed ban on deer baiting and feeding would likely be a reduced risk of transmitting CWD to healthy deer. A primary biological consideration of baiting and feeding deer is the increased potential for disease transmission whenever animals are concentrated. Disease spread may be directly related to deer density, stress, and animal contact. CWD is one of many disease risks associated with feeding and baiting. The proposed action is anticipated to reduce the transmission of CWD between healthy and infected deer by: 1) reducing deer nose to nose contacts; 2) eliminating potentially contaminated food sites; and 3) reducing deer herd density to natural carrying capacity.

There are potential ecological effects associated with the ban on baiting and feeding. The proposed ban on baiting and feeding would likely have the greatest impact in northern forested environments. Populations in Wisconsin southern farmland are maintained well below maximum biological carrying capacity. Thus, artificial energy from baiting and feeding may have minor effects on population dynamics and smaller effects on the environment in the southern farmland.

It is anticipated that a ban on baiting and feeding may result in a smaller deer herd due to a decrease in the artificial placement of food. A smaller deer herd may also result in less overall deer browsing and secondary ecological effects. In addition, the pattern of deer browsing may be more evenly distributed across the landscape. Supplemental feed may raise deer populations above levels that the natural environment will support. Artificial feed (baiting and feeding) may increase the density of deer and focus

their browsing activity to the extent that other resources are damaged. A deer herd within the carrying capacity of the land should have adequate natural food resources, with less stress and competition for food, and should be less susceptible to starvation in winter and disease.

A ban on feeding may restore natural deer yarding in severe winters. Disease transmission in deer yards is likely less than at artificial feeding sites, because foraging behavior under natural conditions is fundamentally different than when deer are supplementally fed. In deer yards, deer eat a variety of woody plants and lichens on trees over a large geographical area and the potential for nose-to-nose contact over food or the consumption of food contaminated by feces and saliva is minimal. In contrast, the replacement of food at artificial feeding sites results in food being concentrated in small areas and likely fosters more nose-to-nose contacts among deer at potentially contaminated food sites.

A ban on baiting and feeding would likely have both positive and negative socio-economic effects. A ban on recreational feeding would likely reduce the enjoyment of residents who feed and observe deer. Businesses that sell bait and feed would be negatively affected. Many small businesses are highly dependent on sales of corn and other supplements to those that bait and feed deer. The overall impact on tourism is expected to be minor as deer would still be plentiful and readily observed in more natural settings. There is little evidence that prohibiting baiting would result in significant reductions in license sales. During the 2002 Wisconsin deer seasons, there was a 19% reduction in the number of archery licenses and a 10% decrease in gun deer licenses sold. Until data from the 2002 CWD deer hunter survey is analyzed, it is not certain whether this reduction was due in part to the elimination of baiting as a hunting method, or whether concerns about CWD were the factors limiting license sales. Eliminating feeding deer in the vicinity of houses close to roadways may decrease the risk of car-deer crashes. Violations relating to shooting hours, shooting from cabins, placement and quantity of bait have been significant and ambiguous enforcement issues in recent years. The prohibition of baiting and feeding would likely reduce these enforcement difficulties.

Other Alternatives Considered.

No Action. If no action were taken, a 10-gallon limit of bait per site would continue, and no restrictions on the feeding of deer would exist.

Disease transmission risk would likely remain elevated when deer are artificially concentrated around food sources that are repeatedly replaced and likely become progressively more contaminated with feces, saliva, urine, and infectious material. Allowing baiting and feeding to continue may maintain high deer densities, causing an increased risk of disease transmission. Deer distribution may remain skewed toward areas of supplemental food, confounding harvest and disease management efforts by reducing hunter access to deer. Carrying capacity for deer may remain artificially elevated in forested zones causing undesirable browsing impacts on the forest environment. Likewise, deer behavioral patterns may remain altered as normal foraging breakdown and timely deer yarding may be delayed in the north. Local communities may be forced to continue to promulgate feeding bans to address growing urban deer problems. Businesses selling baits and supplements would continue their economic activity. Car-deer crashes would likely continue to be an issue as homeowners continue to feed, attract, and hold deer near major roads. DNR enforcement of bait quantity, placement, and hunting hour violations would likely continue.

Apply Ban to a Smaller Geographic Area. Under this alternative, the ban on baiting and feeding would be limited to areas of known infection and surrounding areas.

Given our current understanding of the occurrence of CWD and its transmission, the risk factors occur statewide. CWD has been discovered in free-ranging deer in southwestern Wisconsin and in captive deer facilities in central and southeast Wisconsin. Most recently, in the fall of 2002, CWD was diagnosed in a deer that had escaped from a game farm in southeastern Wisconsin. Deer dispersal movements of over 30 miles, although rare, have been observed in the Midwest. There are 821 captive deer and elk farms throughout the state that potentially could have received CWD-infected animals as there is no live-animal test for screening. The Interagency Health and Science Team deemed the entire statewide herd as a single "at risk" population for purposes of CWD management.

Baiting and Feeding License. This alternative would create a special license for individuals that would allow them to place bait on their property under specific guidelines for hunting purposes or to feed deer for recreational viewing.

Licensing of baiting and feeding would likely allow the risks associated with disease transmission to continue. It would enable closer regulation, increase accountability, and quantify/control the extent and distribution of these activities. It would also generate revenue for conservation purposes and for enforcement and education related to baiting and feeding. However, to the extent that baiting and feeding resumed, the practices would likely also allow all of the adverse effects of baiting and feeding to continue much the same as noted for the no action alternative above.

Quantity Restrictions. Various quantity restrictions have been evaluated under this alternative as a way to compromise on the prohibition of baiting and feeding of deer statewide.

This is unlikely to be effective in controlling the spread of disease. This question has been studied directly, and there appear to be problems associated with both large and small feed piles. Large piles tended to freeze during winter and deer used the warmth from their mouths and nostrils to thaw and consume food. Deer feeding in this manner may leave saliva and nasal droppings in the feed pile. Thus, disease agents may contaminate large food piles. Paradoxically, restricting baiting to five gallon limits replaced daily resulted in higher face to face contacts. While large bait piles may carry an increased likelihood that a diseased deer would be among those gathered, the higher rate of contact among individual deer over smaller piles may result in increased disease transmission.

Placement Restrictions. This alternative evaluates strategies for placement (*e.g.*, number of bait-sites per acre of land, distance from roads) and methods of placing food (*e.g.*, broadcasting vs. piles).

Restrictions on the placement (location) of bait and feed for deer would not likely reduce disease transmission rates as deer would still congregate around food sources. Depending on the type of placement restriction proposed the alternative may or may not have a direct effect on deer herd dynamics, manageability, distribution, and behavior, human safety, and enforcement. Scattering feed also does not address the matter of environmental contamination as deer activity is still concentrated. The important difference between baiting-feeding and any natural forage (*e.g.*, acorns) is the repeated replacement of the food in a given area. The replacement is the mechanism for allowing substantial ingestion of food or material from the site that might be contaminated by saliva or feces.

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Timothy R. Van Deelen earned his Ph.D. in Wildlife Ecology in 1995 from Michigan State University studying white-tailed deer in Michigan's Upper Peninsula. Other degrees include a M.S. in Wildlife Biology from the University of Montana (1991) and a B.S. in Biology from Calvin College (Grand Rapids, Michigan 1988). Dr. Van Deelen has been a research scientist since 1995 specializing in deer and other large mammals in the Midwest. He is the author or co-author of 13 scientific papers on deer and deer management.

William Vander Zouwen is currently serving as Chief of the Wildlife and Landscape Ecology Section in Wisconsin DNR's Bureau of Wildlife Management. He formerly served as Upland Wildlife Staff Specialist and Farmland Wildlife Research Biologist. He has a Master's Degree in Wildlife Ecology from the University of Wisconsin-Madison (1980). He has been involved in deer population management and hunting season management for the last nine years. Some of his relevant deer management work included: deer management unit population goal reviews, Deer 2000 hunting season framework development, establishment of the first Zone T herd reduction season, and coordination of the Deer Population Goals and Harvest Management Environmental Assessment. He is also an avid deer hunter.

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Rule Overview

Rule Description.

Rule orders WM-05-03 and WM-09-03 (Appendix B) proposes revisions to Chapters NR 10, 12, 19 and 45, Wis. Adm. Code, pertaining to CWD control efforts. The intent of this rule proposal is to help protect Wisconsin's statewide deer herd from CWD. These proposals draw upon the best available science and information. This rule reflects the DNR's recommendation that the best approach to controlling CWD is to drastically reduce the deer population in and near the affected area so that diseased deer are less likely to transmit the disease to healthy deer in and around the affected area. The rule would allow the DNR to reduce deer populations to as close to zero as possible within 4½ miles of any deer that tests positive for CWD and to reduce populations in the area surrounding the initial positive to 10 deer per square mile. The DNR also proposes to prohibit practices that cause deer to concentrate, such as baiting and feeding. If recreational opportunities conflict with these control efforts, a higher priority would be placed on disease control.

Wisconsin's CWD control plan was developed with the advice of CWD experts in other states and in consultation with the Wisconsin Department of Health and Family Services (DHFS), the Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP), the Wisconsin Veterinary Diagnostic Lab (WVDL), and the University of Wisconsin. Saskatchewan, Colorado, and Nebraska have similar control efforts where deer herds are being drastically reduced in affected areas to slow or stop the spread of the disease.

Using an adaptive management approach, the proposed rule would implement the most effective CWD control strategies currently available. Adaptive management is a scientific approach that assumes that management actions must be taken with some level of uncertainty regarding the results, but integrates learning as part of the management process (Walters 1986). Adaptive management implements the best management strategy using an experimental design that allows testing the effectiveness of the program. The CWD management program will be monitored, and may be modified in the future as new information becomes available.

Rule Summary.

The proposed rules increase opportunities and incentives for harvesting deer in and around affected areas to reduce the spread of CWD. The rule authorizes the DNR to establish CWD management zones to delineate areas with special opportunities and requirements. . . . These rules are aimed at controlling CWD where it is found. Preventative rules aimed at diminishing the probability that CWD will become established and spread elsewhere include the proposed statewide deer baiting and feeding prohibitions.

The DNR may establish Eradication, Intensive Harvest, and Herd Reduction Zones to control CWD in and near known affected areas. New findings of CWD infections may necessitate identification of additional CWD zones. An Eradication Zone (EZ) would include sections of land within 4½ miles from the center of sections with a deer that tests positive for CWD. An Intensive Harvest Zone (IHZ) would include the EZ and adjacent land to nearby recognizable boundaries such as state and county highways and rivers that allow for clear communication of regulation differences. A Herd Reduction Zone (HRZ) would be an area adjacent to an IHZ where the herd would be managed at 10 deer per square mile of deer habitat to reduce the chance that CWD will spread and become established outside the IHZ. The EZ, IHZ, and HRZ boundaries would be established by emergency rule each spring. These boundaries may change based on results of each year's CWD testing and based on evolving CWD management strategies. This rule proposes the establishment of a HRZ and IHZ shown in Figure 3 around the current known positive CWD cases.

The legislature has granted temporary authorization for shooting from aircraft and vehicles by DNR employees, driving deer with aircraft, and landowners shooting from farm implements. This rule describes the conditions under which aircraft may be used for shooting deer (December 1 - April 15). This special authorization will expire June 30, 2004. Aircraft may be used for other purposes, such as surveys, any time of the year.

The proposed rule would establish a deer population goal of zero within an EZ where infected deer are known to occur, and a goal of less than 10 deer per square mile in the IHZ. The rule establishes a population goal of 10 deer per square mile of deer habitat for all deer management units and partial units in the HRZ.

The rule establishes longer hunting seasons and an earn-a-buck system to achieve the level of herd reduction that is needed in an IHZ/EZ and HRZ. For each antlerless deer shot, a hunter would earn the opportunity to harvest a buck. There is no limit to the number of bucks that are earned. IHZs would change from an earn-a-buck regulation to an either-sex regulation when the zone deer herd is reduced to five deer per square mile of deer habitat. As the deer population is reduced, it would become unreasonable to expect that a hunter must harvest an antlerless deer prior to harvesting a buck. The season length would remain unchanged to allow maximum opportunity for continued efforts to depopulate the affected area. HRZs would change from long hunting seasons and earn-a-buck regulations to standard seasons and regulations (with the option of Zone T seasons) in a deer management unit within the HRZ when the deer herd in that unit is reduced to 15 deer per square mile of deer habitat. Zone T seasons and regulations would be used to further reduce and keep the deer population at 10 deer per square mile of deer habitat if regular seasons were unable to get the deer population to within 20% of 10 deer per square mile of deer habitat.

Deer harvested in these zones would have to be registered in the zone of kill. Registration would be required by 5:00 p.m. on the day after the deer was killed. Hunters would be allowed to transport their deer outside of an IHZ or HRZ, but they still must register it in the zone of kill by 5:00 p.m. the day after harvest. It is important that hunters continue to register their deer in the zone of kill for implementation of hunting regulations (e.g., issuing earned buck tags) and collection of samples for CWD testing. The DNR does not have statutory authority to regulate movement of carcasses of registered deer. Statutory authority to regulate carcass movements is currently being sought, however, the DNR will recommend to hunters that all unused parts of deer carcasses be land-filled or incinerated.

Any legal firearm could be used, including rifles, in an IHZ. The safety record and greater range of effectiveness for rifles, together with the need to harvest all deer in this zone, lead to this recommendation. In a HRZ, firearms would be restricted to those normally allowed during the gun season for each county.

All hunters except waterfowl hunters would be required to wear clothing that is at least 50% blaze orange above the waist during the CWD gun hunts in any zone.

The DNR is asking all landowners in the affected area to cooperate with herd reduction. Non-participating landowners create refuges for both deer and the disease. The DNR is proposing that all DNR-managed lands also be opened to hunting for the same reason. State parks located within IHZs and HRZs would have consistent seasons within these zones. These properties could continue to be exempted from hunting seasons if they are predominantly composed of designated-use areas or are in urban areas. Gun and archery seasons in these parks would begin on the Thursday nearest October 27 (same as October Zone T) and continue through three Sundays following Thanksgiving Day (same date as December Zone T), except that the seasons would not be open between the first four day hunt and the beginning of the traditional deer gun season in November for parks in the HRZs (same as all other lands in the HRZs). Normal hunting hours would apply except that the first four days would close at noon to reduce conflicts among recreationists during this high use weekend.

Deer removal permits would be issued to landowners in an EZ under the newly codified permitting process. Permits would be issued to landowners or to lessees and occupants with the permission of the landowner. Anyone could participate in these hunts if they have written permission from the landowner and meet the normal age, hunter safety, and other legal requirements to obtain a hunting license. Licenses would not be required for permit holders during gun and archery seasons in the EZ. There would be no limit on the number of deer killed. Harvested deer would have to be registered at a designated registration station.

The DNR may authorize landowners and their agents to shoot over bait by permit in an EZ. These permits would allow landowners to be cooperators with the DNR in winter removal operations. Permit conditions would ensure that baiting only be done in controlled situations and with performance expectations.

Baiting for any hunting purpose would be banned statewide to reduce the chance that a disease would become established and spread in local deer herds. An exemption is granted for baiting for bear if the bait is placed in a manner that the bait is not available to deer (*i.e.* in a hole or hollow stump with log or rock cap). Foods produced as a result of normal agricultural practices, standing crop foods plots, and natural vegetation are not considered bait in this regulation.

The DNR has the statutory authority to regulate the feeding of wildlife through June 30, 2004. During this time period, wildlife feeding would be prohibited where the feed is accessible to deer statewide to reduce the chance that a disease would become established and spread in local deer herds. This proposed rule would not prohibit bird and small mammal feeding where the feed is inaccessible to deer. The proposed rule would also continue to allow feeding of wildlife by people attending the feed as long as they removed the feed when they left the site. Devices that are designed to cast feed to the ground would be prohibited. Attendees at the CWD public meetings held around the state in summer 2002, asked the DNR to ban deer feeding statewide and similar responses were received from the CWD management questionnaire (Appendix D).

The proposed rule allows the DNR to issue replacement tags to hunters who surrender to the DNR deer believed to be diseased. This provision would encourage hunters to shoot potentially sick deer and have them tested.

Rule Authority.

DNR authority for these rules is granted in § 29.014, 29.033, 29.307, 29.335, 29.885, 227.11, and 227.24, *Wis. Stats.* Laws interpreted include § 29.033, 29.177, 29.307, 29.335, and 29.361, *Wis. Stats.*

Estimated Cost and Funding Source.

The costs associated with the management and control of CWD in the state would pose a significant financial burden, including reduced license revenues and increased costs in subsequent years. A detailed fiscal analysis of this rule is available in Appendix E.